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ABSTRACT

This paper examines the question of whether two labels should be used for the units traditionally called "sentence" and "clause" or whether the same label should be used and the units distinguished in some other way. Proponents of a two-level analysis have traditionally argued that sentences and clauses can have different structures. A related argument is that sentences and clauses have different distributions. It is proposed that a sentence and a clause have the same deep structure, and that they have the same potential distribution, and therefore can be assigned the same categorical label. An approximate theory of levels is proposed which considers words and sentences as borderline categories, with words defined as minimal phrases and sentences as minimal utterances. Four grammars are outlined as well as a sentence taxonomy which is compatible with each alternative. A translation into Finnish and Swedish of the terminology contained in the taxonomy is proposed. It is concluded that one category, "sentence," should be used for the traditional categories "sentence" and "clause." This category can be subdivided according to functional criteria into "independent," "conjunct," and "hypotactic" sentences, and according to structural criteria into "compound sentence" and "clause." (AM)

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Sentence and Clause:

A Taxonomy in a Generative Framework

by

Erik Andersson

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PREFACE

This is the first joint publication of the Text Linguistics Research Group maintained by the Academy of Finland. The Group works in offices provided by Åbo Akademi (The Swedish University of Åbo, Finland).

Since my appointment by the Academy of Finland as a Research Professor for three years from September 1, 1974, I have been joined by four Research Scholars (Erik Andersson, Auli Hakulinen, Fred Karlsson and Viljo Kohonen) and one assistant (Marianne von Wright). All of us share an interest in the linguistic study of texts. But we are not working as a team on a single project. The purpose of the Group is to provide its members with a setting to stimulate their individual and collaborative research. Thus each author is responsible for his or her own paper. The Group hopes to produce further reports and working papers in a similar format. As many of them will reflect work in progress, comments and criticism will be particularly welcome.

Thanks are due to the Research Institute of the Åbo Akademi Foundation for including this volume in its series of publications and for help with typing.

November, 1974.

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1. Sentence and clause: two categories or one?

In text theory, the precise status of units such as text, utterance, sentence and clause is of fundamental importance. In fact, their definition and treatment will largely determine one's approach to text analysis and text generation.

The subject is of course not new. The definition of the sentence is a very old problem in grammar and rhetoric, and it has lost none of its importance in spite of developments in grammatical theory and method. In the past decade, several grammarians have pondered the relations between the concepts sentence and clause in English (Fowler 1965, Longacre 1967, Blansitt 1970, Huttar 1973). There are two basically different views on the subject. Most Neo-Firthian and tagmemic linguists regard the sentence and the clause as units on different levels, or more exactly as units of different rank (Halliday 1961). Transformationalists, on the other hand, as well as Blansitt regard both concepts as units on the same level. In a formal theory, these two positions might be reflected in the choice of categorial labels for the two units. In the first case, different labels have to be used for sentence and clause, since units of different rank have to be labelled differently; in the second case, it is possible to use the same label for both units. This is in fact done in current transformational grammar.

In this paper I shall investigate whether two different labels should be used for the units traditionally called sentence and clause, or whether the same label should be used and the units distinguished in some other way. If the main principle for the assignment of categorial labels is that units of

the same category should have the same potential distribution, this amounts to an investigation as to whether sentences and clauses have the same distribution.

2. Two models for the generation of sentences

Let us assume that we operate within a text grammar, which generates not just sentences, but sequences of sentences, i.e. texts. We can then construct two simplified rule systems fitting the two positions under investigation.[1]

A. 1. $T \rightarrow (S + p)^n$ for $n \geq 1$
   2. $S \rightarrow C\ (k + C)^n$ for $n \geq 0$
   3. $C \rightarrow NP + VP$
   4. $VP \rightarrow VP + Adv$
   5. $Adv \rightarrow Prep + NP$
   6. $VP \rightarrow V + NP$
   7. $NP \rightarrow C$

B. 1. $T \rightarrow (S + p)^n$ for $n \geq 1$
   2. $S \rightarrow S\ (k + S)^n$ for $n \geq 1$
   3. $S \rightarrow NP + VP$
   4. $VP \rightarrow VP + Adv$
   5. $Adv \rightarrow Prep + NP$
   6. $VP \rightarrow V + NP$
   7. $NP \rightarrow S$

T can be read as text, S as sentence, and C as clause. The difference between the systems is that system A operates with two categorial labels, S and C, where system B has just one, S. Although both systems are given in a generative format, the first is not incompatible with a Neo-Firthian or tagmemic framework, where sentence and clause would be units of different rank. The second system, on the other hand, requires the units to be of the same rank and reflects the standard transformational position in this respect.

System A formalizes a common traditional definition of sentence and clause: the former is a syntactically independent unit of the text (i.e. is introduced by rule 1.), the latter has an NP + VP - structure (i.e. is re-written by rule 3.). Of course there are other possible definitions of the concepts, which could also be described by other rule systems.

The p of rule 1. can be regarded as a strong juncture. In spoken language, it is normally manifested as a pause and a falling intonation. There are exceptions to the last principle, such as imperatives, certain questions, etc. In writing, it is manifested as a major punctuation mark. The k of rule 2. can be regarded as a weaker juncture. It is manifested as upheld intonation, sometimes a pause, sometimes a conjunction such as and, or, but, and in writing, sometimes as a comma.

It is in fact not quite accurate to analyze k as a conjunction without expanding the traditional concept of conjunction, nor is it accurate to state that conjunctions typically occur only in co-ordinate structures. It is also possible to introduce an independent sentence with for instance and, but or for. Such sentence-initial conjunctions resemble intersentential adverbs like therefore, also, etc. Consequently, conjunctions cannot be used as criteria of co-ordinate structures, since they have a wider distribution.[2] On the other hand, it might be possible to regard initial conjunctions in independent sentences as exceptional. These sentences could be analyzed as additions to already completed sentences in the same way as And John in (1):

(1) I saw Peter. And John.

An independent sentence introduced by a conjunction would then be a supplement to an earlier sentence. It must be made into a separate sentence because the speaker has already signalled that the preceding sentence is completed. The Speaker of (1) would then utter two successive variants of a sentence. First he states I saw Peter, then he in one way cancels this utterance and corrects it to I saw Peter and John. This correction might even be done by a different speaker. Alternatively, And John can be regarded as an ellipsis for the supplemented sentence. And would then function as an ellipsis

marker. In either case, the supplemented sentences would indeed be co-ordinate structures, and conjunctions can then always be taken as reflexes of k in the above rules.

Although identification problems might arise in specific cases, there is no doubt that many languages, among them English, Swedish and Finnish, possess the two kinds of structures that are generated by rules 1. and 2. There is an intuitive difference between independent sentences occurring next to each other and co-ordinate sentences combined into a syntactic construction.

The reader might have observed that co-ordinate structures have here been generated by the base rules, not introduced by transformations as in Chomsky (1965). Actually, the solution chosen here is a natural continuation of Chomsky's re-analysis of the transformational theory in (1965). He then disposed of some so-called generalized transformations, and disposing of all of them, including the co-ordination transformation, by the introduction of Rule 2 would simplify the theory. Rule 2. can perhaps be considered as a special case of a more general co-ordination rule, operating on any categorial label. Sentence co-ordination would then be a process similar to VP co-ordination, NP co-ordination, etc. It has been shown that at least some NP co-ordinations have to be introduced by the base rules (Lakoff & Peters 1969). It follows that a more general description is likely to be provided by introducing all co-ordination, including sentence co-ordination, through the base rules.

3. Deciding between the two models

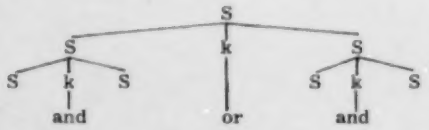
If we take a closer look at the systems A and B, we shall find that system A brings with it some problems that system B can handle quite elegantly. According to system A, the conjuncts in a co-ordinate sentence cannot themselves be co-ordinate sentences, since they are classified as C's and have to be re-written as NP + VP. There is no way of generating sentences like (2):

(2) Either Ted has to wait and Fred has to go, or else Fred has to wait and

Ted has to go.

Clearly, we need rule 2. of system B to generate a structure like that in (3):

(3)

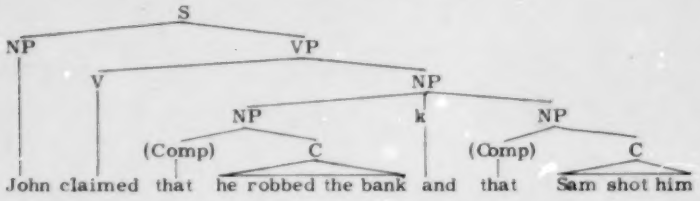


Considerations of the same sort show that also rule 7. of system A is insufficient, although the evidence here is more scanty. In this system, there is no way of generating embedded co-ordinate sentences. The symbol C of rule 7. can only be expanded as NP + VP, not as C + k + C, as would be needed. However, sentences such as (4) can be generated anyway, if we analyze the sentence as containing an NP co-ordination rather than a sentence co-ordination.[3]

(4) John claimed that he robbed the bank and that Sam shot him.

This sentence would have the structure given in (5):

(5)



The complementizers in (5) are transformationally inserted and therefore put inside parentheses here. On the other hand, it might be possible to generate complementizers in the base rules by replacing rule A 7. with A 7′.

A 7′. NP → Comp + C

Such a rule would then predict that sentences like (6) are ungrammatical (unless a transformational rule deletes the complementizer).

(6) John claimed that he robbed the bank and Sam shot him.

Some speakers find (6) grammatical but make a distinction between (4) and (6), so that (4) is used to report two different claims, while (6) reports only one. In (4) the speaker claims two things, a) that he robbed the bank and b) that Sam shot him. In (6) he simply claims the combination of them. It would be nice to be able to symbolize this difference syntactically, so that (4) contains co-ordinate NP's, while (6) contains co-ordinate S's (Lakoff 1971 pp. 253-256). Then both rule A 7. and rule A 7'. are insufficient. We need rule B 7. to introduce embedded co-ordinate sentences.

Other speakers find (6) ungrammatical and use (4) in both meanings. However, it would still be nice to derive (4) from two different deep structures corresponding to the two readings, i.e. to handle the difference as a real ambiguity rather than as a vagueness. This can be done if we, even for these speakers, postulate one deep structure with NP co-ordination and one with sentence co-ordination. The only difference between the dialects would be found in the form of the rule introducing that. In one dialect that would be introduced once before the embedded sentence, possibly by the base rules, in the other dialect it would also be transformationally copied before each conjunct of an embedded sentence.

Other complementizers might behave differently. It might be somewhat easier to get an embedded co-ordinate sentence with only one whether:

(7) I asked Peter whether he was at home and Mary was working.

(8) I asked Peter whether he was at home and whether Mary was working.

Sentence (7) would report one single question and contain a sentence co-ordination, sentence (8) would report two different questions and contain an NP co-ordination. If both (7) and (8) are grammatical to a speaker, but not (6), then this speaker applies the complementizer copying transformation to that but not to whether.

Our reasons for allowing embedded co-ordinate sentences are thus mainly semantic and rather weak. But if we accept them, we have to introduce a rule like B 7. in our grammar A, and this introduction makes the alternate rule A 7. unnecessary. There is now no longer any need to dis-

tinguish between S and C in the rules, since every rule where C occurs is matched by an exactly similar rule where S occurs instead of C. It is of course possible to retain rule A 2., although we add the new rule B 2., thereby still making a distinction between S and C. But then we miss the generalization that clauses and compound sentences have exactly the same distribution. They both occur as embedded structures, they both function as conjuncts, and they both occur as independent sentences.[4] Considerations of economy force us to use a single symbol, i.e. to choose system B rather than system A.

4. A criticism of the arguments for a two-level analysis

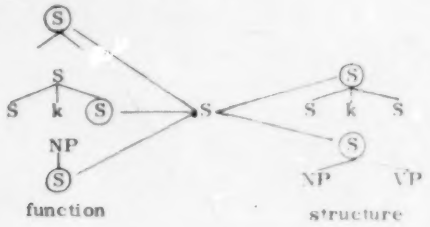
Let us take a brief look at the arguments that grammarians have constructed in favour of a two-level analysis. One argument is that sentences and clauses can have different structures (Fowler 1965). A clause always has a NP + VP -structure, while a sentence consists of one or several co-ordinate clauses. But the proponents of this argument have overlooked the fact that a categorial label is mainly a general name for units with the same distribution, and not for units with the same internal structure. If the units of a category have different structures, this should be reflected in the grammar by the existence of several rules re-writing the category label in different ways (in our restricted grammar rule 2. and rule 3.).

A related argument is that sentences and clauses have different distributions (Huttar 1973 explicating Fowler 1965). A sentence always occurs independently, while a clause occurs embedded or as a constituent of a sentence. But then we have confused actual environment with possible distribution. When a sentence occurs independently, it has a certain environment, a certain function, but the same string of morphemes with the same internal structure could also have occurred conjoined or embedded. It is this possible distribution that functions as a criterion determining the categorial label of the unit. Initial a certainly has an environment different

from that of final a, but we might anyway want to regard both a's as belonging to the same phoneme, provided that they have the same internal structure in terms of distinctive features, and can therefore be identified as identical. We should not use two different categorial labels for the same unit in two different environments. Moreover, two items that are not identical can nevertheless be assigned the same syntactic categorial label, provided that they have the same potential distribution. Each possible environment should be reflected in the grammar by a rule generating the categorial label in that environment. In our case the categorial label S is generated by rules 1., 2. and 7. in our fragment.

We then obtain the following diagram:

(9)



(distribution)

This diagram shows that an S can occur in three different environments and that it can have two different structures. The internal structure of S does not matter when assigning categorial labels, since both structures can occur in all three environments, i.e. they have the same distribution. Nor should different categorial labels be assigned to S's in different functions, since the same S that in a certain text has a certain function might have another function in another text. One might argue that an independent sentence and a similar looking but embedded sentence should be assigned to different categories, since, on the surface, they might differ in word order, etc. and therefore are not strictly identical. However, these minor differences between main and subordinate clauses can be accounted for transformationally. In deep structure, an independent sentence and its embedded counterpart

are structurally identical, and can therefore be assigned the same categorial label.

Huttar states that an economical description of English demands both a sentence level and a clause level:

> ...to describe paragraphs in English as composed of clauses (omitting sentence), or sentences as composed of phrases (omitting clause), forces into a description a great deal of redundancy and loss of generalization (Huttar 1973, p. 75.)

But even if Huttar's conjecture should be correct, this does not force us to accept a two-level analysis. It is just an argument for a more elaborate syntactic structure. An argument for an intermediate node in a tree-diagram should not be confused with an argument for a new level. It is quite likely that some sentences in English have to be analyzed as consisting of other sentences. We can still use the same categorial label for a sentence and its sentential constituents.

Huttar also points out a number of similarities between the clause-sentence relationship and the word-phrase relationship, thereby suggesting a similar analysis of the two. But the above arguments for a single categorial label for both clause and sentence are parallelled by similar arguments for using the same categorial labels for both words and phrases with the same distribution. Such a solution would explain why a word in a construction can often be replaced by a phrase without basically changing the constituent structure of the original construction. For instance, it might be argued that intransitive verbs should be categorized directly as VP, proper names as NP, etc., although I shall not pursue the question further here.

5. A proposed revision of the rank theory

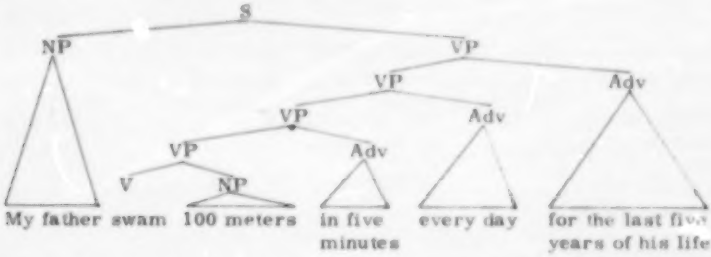
The ultimate motivation for the theory of levels or ranks is the principle that units on a lower level typically combine to form a unit on a higher level. But this principle should lead to the introduction of many more levels than have been introduced in the literature. It could for instance be argued

that verb phrase constitutes an independent level between phrase and clause, since phrases such as verbs, noun phrases and adverbs typically combine to form a verb phrase, and a verb phrase typically combines with a noun phrase to form a clause. A noun phrase is admittedly a unit on a lower level than a verb phrase, since it often occurs as a constituent of verb phrases, but some variants of the rank theory seem to allow for the inclusion of units from lower levels in such combinations. But the introduction of a VP-level could be rejected on the grounds that verb phrases have other functions as well; e.g. they can be combined with verbs or adverbs to form new verb phrases, as in (10) (cf. rule 4, above):

(10) My father swam 100 meters in five minutes every day for the last five years of his life.

The structure of (10) is shown in (11):

(11)



The 'accomplishment' verb phrase swam 100 meters in five minutes is made durative by the addition of the adverbial every day, and the durative feature makes possible the addition of the adverbial for the last five years of his life. (cf. Andersson, forthcoming).

The principle that a unit is formed only by combining units on lower levels is contradicted here. The same argument can be used against other levels as well. Clauses can even be combined with noun phrases to form new noun phrases, when they function as relative clauses, though my rules have not been extended to cover this phenomenon. Here a unit contains a unit from a higher level. These examples seem to indicate that a unit can contain other

units from the same or a higher level. Defendants of the rank theory have tried to explain such cases by processes like downgrading (Hill 1958, p. 357 ff.) or rank shift (Halliday 1961), devices that seem to make the entire theory of ranks questionable.

There are some possibilities for saving the device of rank shift, however. One is to introduce statistical criteria. The normal function of a clause would be to occur as a constituent of a sentence. Only exceptionally would it be a constituent of a phrase or of another clause. These rare cases would be explained by rank shift. But rank shift does not seem to be a very rare phenomenon. On the contrary, English sentences are full of clauses embedded in other clauses, in verb phrases, and in noun phrases. Perhaps another solution could be attempted. The term rank shift suggests that a process is going on, which could be conceived as a transformational device. If such a device were explicitly used the underlying ranks need not be disturbed by the appearance of inconvenient structures in the wrong place. All clauses would remain constituents of sentences. During the derivation, clauses might come to be embedded in other constituents, too. This solution would be similar to the generalized transformations of Chomsky (1957). Relative clauses, object clauses and adverbial clauses were here generated as independent sentences that were later integrated into the matrix sentence. It is not at all clear whether such a solution is justified. It is certainly a radical departure from the original model.

An alternative solution that does not make use of rankt shift is to regard all phrases, including N, V, NP, VP, S, as units of the same level. Phrases combine with phrases to form phrases. A phrase composed in this way should not be confused with a unit on a higher level.

In many languages, phrases typically are not used to form new words, that is, phrases do not function as morphemes, which are the units building up the words. If such a principle is rigidly adhered to, it is possible to regard morphemes and phrases as elements on two different levels. The word would then mark the borderline between these levels, being composed out of morphemes, but functioning as a phrase.[5]

In pre-transformational grammar, a sentence is a borderline cat-

egory exactly like the word. Sentences are syntactically independent units, clustered together to form texts or utterances. Clusters of sentences cannot be used as phrases. This suggests a three-level analysis with word and sentence as borderline categories:

(12) morpheme word phrase sentence utterance

Words would be defined as minimal phrases, and sentences as minimal utterances. In the same way as a word functions as a phrase but is composed of morphemes, a sentence functions as an utterance but is composed of phrases.

However, this tripartition is only an approximation. There are exceptions to it. In Swedish, certain lexicalized phrases in fact do occur as morphemes, e.g. svarta-vinbärs-buskar, Glada änkan-föreställning. Likewise, utterances that cannot be analyzed as clauses, i.e. sequences of sentences, can sometimes occur embedded under a reporting verb (direct speech):

(13) Peter said: "Mary is working. Are you working,too?"

Further investigations will be needed to show whether such a tripartition theory is tenable or not.

6. Sentence and utterance

Minimal utterances are not always analyzable as clauses or even combinations of clauses. NP's, interjections etc. can also occur as minimal utterances. In transformational grammar, such utterances have generally been generated out of full S's by deletion. However, this solution implies that these utterances have a meaning comparable to the meaning of S's, perhaps composed of a propositional content and a mood. This is debatable. We might therefore prefer to introduce independent NP's, interjections, etc. through the base rules, as parallels to S. This can be done if we replace rule 1. in system B with two rules:

C. 1. a $T \rightarrow (U + p)^n$ for $n \geq 1$

1. b $U \rightarrow \{S, NP, Int, \ldots\}$

2. -7. as in B

T can now be read as text or total utterance, U simply as utterance, Int as interjection. It is tempting to use the same label for both T and U, since they have a similar distribution. A sequence of sentences often fulfils the same tasks as a text consisting of just one sentence. Using only the symbol U, the grammar will change into D:

D. 1. a $U \rightarrow (U + p)^n$ for $n \geq 1$

1. b - 7. as in C.

Rule 1. a is now recursive and can be repeated over and over again. This implies that texts can have an elaborate structure. The first application of rule 1. a generates 'chapters', the second 'paragraphs', etc.

One argument for the distinction between sentence and utterance is the observation that two conjoined sentences have to possess the same illocutionary force, i.e. both be declarative sentences, questions or imperatives. A declarative sentence cannot be combined with a question in a coordinate structure. We can account for this if we hypothesize that illocutionary force in the base rules is a property of the category minimal utterance, rather than of the category sentence. U can be re-written as Ill(ocutionary force) + S. We would then get the following rule system:

E. 1. a $U \rightarrow (U + p)^n$ for $n \geq 1$

1. b $U \rightarrow \{Ill + S, NP, Int, \ldots\}$

2. $S \rightarrow (k + S)^n$ for $n \geq 1$

3. $S \rightarrow NP + VP$

4. $VP \rightarrow VP + Adv$

5. $Adv \rightarrow Prep + NP$

6. $VP \rightarrow V + NP$

7. $NP \rightarrow Comp + S$

During the derivation, Ill and Comp are transformationally copied in front

of all conjuncts of a sister S. Adopting grammar E and distinguishing between the categories S and U is not exactly the same as accepting a two-level analysis. However, there is a certain similarity. Rule system E consists of two recursive subsystems, (1.) and (2.-7.). Once the first subsystem has been completed and the second entered, the first subsystem can never be re-applied. System E could be completed with a third recursive subsystem for word-formation.

So far, I have not considered the traditional semantic definitions of a sentence at all. A sentence is often defined as a unit expressing a thought. However, the same definition has also been given for clauses. If clauses are considered as S's with an NP + VP - structure, we can perhaps take the meaning of a clause to be a simple proposition. Compound sentences also denote propositions, viz. complex ones. This means that the view that all S's (including clauses) denote thoughts (i.e. propositions) is quite plausible.

It is possible to argue that the distinction between (minimal) utterances and sentences in grammar E is actually identical with the traditional distinction between sentences and clauses. However, there are some differences. A minimal utterance of E should not be defined as a syntactically independent expression of a thought, but rather as the minimal expression having an illocutionary force. A sentence of E need not have an NP + VP - structure, which has often been a traditional requirement of clauses. I have therefore preferred the terms utterance and sentence for the categories U and S in E. I suppose one could redefine the concept clause so that a compound S can be regarded as a clause, and use the terms sentence and clause for the categories U and S, but this would involve a too radical change of traditional conceptions.

I have pointed out three possible reasons for distinguishing between two categories S and U: 1) we might not want to analyze all minimal utterances as sentences, 2) utterances might be joined together by a recursive rule to form higher utterance units, which do not have the same distribution as sentences, 3) illocutionary force might be a property of utterances, but not of

sentences. However, these arguments are only tentative, and I shall therefore leave to the reader the choice between the grammars B, C, D, and E. The sentence taxonomy given in the next section is not dependent on this choice, but is compatible with all the alternatives.

7. A sentence taxonomy

There has been a lot of confusion in the area of sentence terminology. For Randolph Quirk the concepts sentence and clause seem to be mutually exclusive: the term clause is restricted to embedded S's, while sentences are syntactically independent S's (Quirk 1962, p. 192). Other grammarians define clause as a constituent with an NP + VP -structure, possibly simultaneously functioning as a sentence or rather as the single component of a sentence (Fowler 1965, p. 13). Huttar (1973) restricts the term clause to S's containing no other S or rather not immediately dominating any other S. The rule systems given above permits the introduction of a much more elaborate taxonomy, which, at the same time, is formal, and covers all the various other definitions of sentence, clause, etc. The choice of labels in the taxonomy is, of course, open to discussion.

If we use the same categorial label S for both traditional sentences and clauses, as in system B, we can distinguish between them by means of a subclassification of the S's according to their structure and function. Chomsky offers a parallel to this when he uses the same category label NP for both subjects and objects, but distinguishes between them by referring to the structural environment of the NP's in the sentence, and in this way refers to their different functions. A subject NP is immediately dominated by an S, while an object NP is immediately dominated by a VP (Chomsky 1965).

We can now subclassify S's according to their function by referring to the rule that has generated the S. There are three rules generating S's in our system E, so we get the following subclassification:

(14) a. independent sentence - generated by rule 1, b

b. conjunct sentence - generated by rule 2.

c. hypotactic sentence - generated by rule 7.

We are here using the term sentence for any S, in accordance with transformational practice. We have to find a new name for the traditional category 'sentence'. In some traditional treatments this category is identical with our independent sentence, in other cases it is identical with a minimal utterance. Note that these two categories merge if we adopt rule system B.

These definitions need not be presented in terms of generative rules. We can define the three categories in terms of the structural environment of the sentence:

(15) a. independent sentence - an S not dominated by any S

b. conjunct sentence - an S that together with one or more S's is immediately dominated by an S

c. hypotactic sentence - an S immediately dominated by an NP

The advantage of the second type of definition is that the subcategorization can be applied to levels other than deep structure, including surface structure. These structural definitions are of course also dependent on our rules and have to be modified if we analyze the structure of English sentences differently from what is suggested here. The principle underlying the present definitions is that paratactically combined sentences should count as conjunct sentences and hypotactically adjoined sentences should count as hypotactic sentences. We might want to introduce relative clauses dominated by N rather than by NP, and we might want to generate adverbial sentences directly from an adverb without an intervening NP. Nevertheless, both these types of sentences would probably be classified as hypotactic. Also subject sentences are here classified as hypotactic, although there is some disagreement whether they are hypotactically adjoined or not. If necessary, we can introduce a further subdivision of hypotactic sentences into subject and non-subject hypotactic sentences.

We can also subclassify sentences according to their structure by referring to the rule that re-writes the S. Since we have two such rules in

our grammar, we get the following subclassification:

(16) a. compound sentence - an S rewritten by rule 2., alternatively, immediately dominating two or more S's

b. clause or normal sentence - an S rewritten by rule 3., alternatively, immediately dominating NP and VP

Observe the difference between a compound sentence and its parts, which are conjunct sentences. It might seem odd to reintroduce the term clause, but it must be understood that here 'clause' is merely a subclass of the category S and does not constitute a separate category.

It is also useful to introduce two further subdivisions of clauses according to functional criteria as in (17) or to structural criteria as in (18):

(17) a. main clause - a clause not dominated by any other clause

b. subordinate clause - a clause dominated by another clause

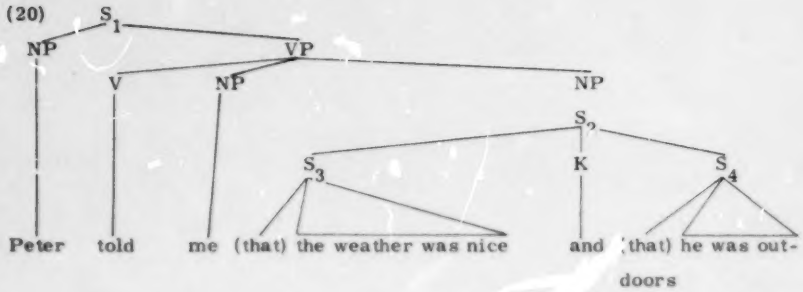
(18) a. simplex clause - a clause not dominating any other clause

b. complex clause - a clause dominating another clause

This means that we introduce a difference between hypotactic sentences and subordinate clauses. Observe that, by definition, a hypotactic sentence can be a compound sentence as in (19), which has the structure shown in (20):

(19) Peter told me that the weather was nice and that he was outdoors.

(20)

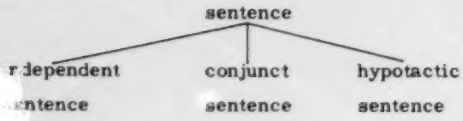


The hypotactic sentence in (19) is S_2, that the weather was nice and that he was outdoors. This is a compound sentence, not a clause. S_3, that the weather was nice, is a conjunct sentence, not a hypotactic sentence, because it is conjoined to another sentence, S_4, before the hypotactic adjunction takes place. However, it is simultaneously a subordinate clause, since it is a clause dominated by another clause, viz. S_1. The division between main and subordinate clauses is needed in many languages to account for word order and other phenomena by restricting the application of certain transformations in subordinate clauses. The category 'hypotactic sentence' is seldom needed in the description of the rules of a language, but is needed in a complete sentence taxonomy as a category complementary to independent and conjunct sentences.

We can still retain the term embedded sentence of transformational grammar to denote any S dominated by a clause. This category will then include both hypotactic sentences and subordinate clauses as well as another very rare type, viz. an embedded conjunct sentence that also is a compound sentence. Such a sentence would be produced if one embeds sentence (2). Subordinate clause will in fact be equivalent to embedded clause.

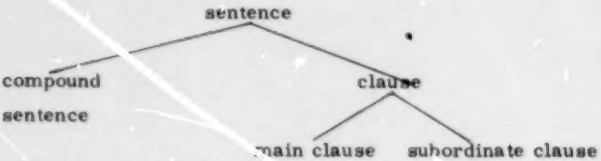
We can now replace the dichotomy of (16) by a tripartition into compound sentences, main clauses, and subordinate clauses, or a tripartition into compound sentences, complex clauses and simplex clauses. We can draw the following diagrams of all the suggested subclassifications:

(21)



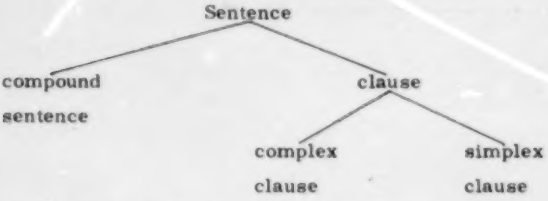
purely functional classification)

(22)



(partly structural, partly functional classification)

(23)



(purely structural classification)

The division in (23) is not equivalent to the traditional tripartition into compound, complex and simplex sentences, since we have changed the definition of the term sentence. The traditional terms would be translated into the terminology of this paper as dependent compound sentence, independent complex clause (or sentence), and independent simplex clause (or sentence).

The distinctions made here can thus be combined to form new categories. Note that the combinations independent subordinate and hypotactic main are excluded by definition. However, there are candidates for these categories, in the first case Swedish exclamatory sentences like (24), in the second case direct speech as in the complement in (25):

(24) Så vacker du alltid är!
'How beautiful you always are!'

(25) Peter asked: "Are you ill?"

If one accepts these classifications, one would have defined main and subordinate clause differently from this paper, perhaps according to purely structural rather than functional criteria, which is the approach I have adopted.

The full classificatory schema would then have the following appearance. In the examples, the categories are exemplified by underlining.

(26)

independent compound S	I came home and Mary went out.
- " - complex (main) cl.	I came home when Mary went out.
- " - simplex (main) cl.	I came home.
conjunct compound S	Either I came home and Mary went out or it was the other way around.
- " - complex main cl.	I came home when Mary went out and Mary came home when I went out.
- " - - " - subordinate cl.	He asked whether I came home when Mary went out and Mary came home when I went out.
- " - simplex main cl.	I went home and Mary went out.
- " - - " - subordinate cl.	He asked whether I came home and Mary went out.
hypotactic compound S	He asked whether I came home and Mary went out.
- " - complex (subord.) cl.	I said that Mary went out when I came home.
- " - simplex (subord.) cl.	I said that I came home.

As I said above, the distinctions can be applied to the deep structure of a sentence as well as to the surface structure or to any intermediate structure. In some cases, an S is pruned between deep and surface structure, since its NP + VP -structure has been lost. Such a clause or rather its remnants on the surface, can be called a quasi-clause (Postal 1973). Examples would be certain infinitival, participial and comparative constructions, and perhaps nominalizations and gerunds:

(27) This is easy to understand.

(28) I had my car stolen yesterday.

(29) He is bigger than me.

(30) Singing in the rain is not always as nice as you might think.

We could also introduce a further subdivision of quasi-clauses, for instance to be able to distinguish between Finnish participial and infinitival constructions which seem to behave somewhat differently (Hakulinen 1973). If we choose grammar B rather than D or E, independent noun phrases and interjections would also have to be analyzed as quasi-clauses.

However, we might not want to prune away the S of all incomplete sentential structures. If, without the S being pruned, the structure of a sentence has changed so much during the derivation that it cannot be placed into any of the structural subcategories given above, a new subcategory could be introduced parallel to the structural subcategories given in (16). This could be called incomplete sentence, and an example of such a category would be (31):

(31) Come here!

The difference between an incomplete sentence and a quasi-clause lies in that only in the quasi-clause has the S been pruned.

8. A corresponding terminology in Swedish and Finnish

I shall conclude by proposing corresponding terms for Swedish and Finnish. Finnish sentence terminology has also been discussed in Tuomikoski (1968), Yli-Vakkuri (1973), and Hakulinen (1973), and many of the terms used here are borrowed from them.

A translator of the terminology presented in section 7 has to choose between two strategies. On the one hand, he can choose to bring out the earlier, widely accepted correspondence sentence - mening - virke and clause - sats - lause. On the other hand, he can choose the correspondence that has been established in transformational studies: sentence - sats - lause. I have here chosen the latter alternative, since this enables us to give most of the terms an established significance.

English	Swedish	Finnish	definition
text	text	teksti	Highest U or T
(total utterance)	(totalyttrande)	(kokonaislausuma)	
utterance	yttrande	lausuma	U or T
minimal utterance	mening	virke	lowest U
sentence	sats	lause	S
independent s.	frisats	vapaalause	highest S
	(självständig)	(itsenäinen)	
conjunct s.	ledsats	osalause	paratactically
	(samordnad)	(rinnastettu)	combined S
hypotactic s.	undersats	alilause	hypotactically
	(underordnad)	(alistettu)	adjoined S
compound s.	samsats	lauseliitto	S immediately
		(rinnasteinen	dominating two
		yhdyslause)	or more S's
clause	normalsats	normaalilause	S immediately
			dominating NP + VP

English	Swedish	Finnish	definition
main clause	huvudsats	päälause	highest clause
subordinate clause	bisats	sivulause	less than the highest clause
complex clause	komplex sats	lausekompleksi (alisteinen yhdyslause)	clause dominating another clause
simplex clause	enkel sats	yksinkertainen lause	lowest S
quasi-clause	kvasisats	kvasilause	remnants of pruned S
incomplete s.	ofullständig sats	epätäydellinen lause	remnants of unpruned S

The definitions are only abbreviations of those given in section 7. Labels for categories obtained by intersecting two or several of the above categories can be obtained in the obvious way by preposing adjectives for e. g. functional categories to labels for structural categories: independent complex main clause - självständig komplex huvudsats - itsenäinen alisteinen päälause. Categories can also be added to each other. A common label for compound sentences and complex clauses can be introduced, e. g. Finnish yhdyslause. Observe also that the term embedded sentence - inbäddad sats - upotettu lause can be used as a common label for subordinate clauses, embedded compound conjunct sentences, and hypotactic sentences, i. e. for S's dominated by a clause.

9. Summary

In this paper, I have discussed different views on the relationship between the traditional categories `sentence' and `clause'. I have argued that

we should recognize only one category, since both clauses and sentences have the same distribution. For this category I propose the term sentence. All sentences can occur independently, as conjuncts, or hypotactically adjoined, regardless of their internal structure. On the surface, e.g. main and subordinate clauses might have a different appearance, but this does not force us to assign these clauses to different categories, since the differences can be transformationally introduced. The only doubtful point is whether we should allow embedded co-ordinate sentences (cf. section 3). If not, compound sentences would not have the same distribution as clauses, and a difference in category label would perhaps be motivated.

Sentences can be subdivided according to functional criteria into independent sentences (roughly corresponding to traditional sentences), conjunct sentences, and hypotactic sentences, and according to structural criteria into compound sentences and clauses. Clauses can be divided according to functional criteria into main and subordinate clauses, and according to structural criteria into complex and simplex clauses. However, all these categories are just subcases of the same category S, sentence. I also propose corresponding Swedish and Finnish terms.

The Neo-Firthian solution was not to assign different category labels, but different rank to sentences and clauses. My analysis implies that this is wrong. However, it might still be possible to distinguish between several ranks, for instance the morpheme level, the phrase level, and the utterance level. It might be argued that minimal utterances and sentences should be regarded as distinct units. A sentence, S, would then signify a proposition, whereas a minimal utterance, U, would also comprise an illocutionary force. If we accept such a difference, we have in one way reintroduced the old distinction between sentence and clause, but in a somewhat modified form and under a new name.[6]

Notes:

1. Rules 1. and 2. are given in a rule schema format. The material enclosed in parentheses can be repeated n times for those integers n specified in the rule.

   The rules are unordered and optional. Further expansion rules are of course necessary in a complete description, but these details will not influence the argument of this paper.

2. It is an open question whether we should regard as a constituent a group of independent sentences linked together by conjunctions or other cohesive devices. Here I shall only observe that such a group of sentences cannot be a member of the category sentence, since they cannot be embedded or co-ordinated in the same way as a normal sentence. The only possible exception that I can think of is direct speech, where a sequence of independent sentences might be "embedded" as the object of a reporting verb. However, this embedding is of a very special kind and does not alter the conclusion that sentences and sequences of independent sentences have different distribution.

3. Of course we then have to supplement our rule systems with rules for NP co-ordination.

4. This parallel distribution is even an argument for allowing embedded co-ordinate sentences in the grammar, although it might seem somewhat circular.

5. On the other hand, it might be possible to explain the word differently. We can perhaps say that even morphemes and phrases belong to the same level and have the same categorial labels, but that the transformations that give inflectional endings their place in the sentence (agreement transformations, affix hopping, etc.) for some reason cannot go down into words. Words would then behave as islands with respect to inflectional transformations.

6. I want to thank Geoffrey Phillips, Nils Erik Enkvist, Fred Karlsson, Auli Hakulinen and Viljo Kohonen for valuable advice. They have given useful comments on many theoretical points, improved the clarity of the exposition, and corrected my English.

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